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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/837,885	04/18/2001	Jun Liu	1941-76	1062

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09/08/2003

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EXAMINER

CHANG, VICTOR S

ART UNIT

PAPER NUMBER

1771

DATE MAILED: 09/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/837,885	Applicant(s) LIU ET AL.	
	Examiner Victor S Chang	Art Unit 1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 09 July 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11,53-55,66-70 and 75-90 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11,53-55,66-70 and 75-90 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The Examiner has carefully considered Applicant's amendments and remarks filed on 7/9/2003. For the purpose of clarifying the claims, Applicant's amendment to correct the numbering of the claims has been entered.

It should be noted that while the four new claims in the First Preliminary Amendment was inadvertently not entered, the same claims were amended and entered in the Second Preliminary Amendment as claims 20-23, and renumbered as claims 83-86 in the Prior Office action, Paper No. 7. As such, in fact, all the pending claims were properly entered and treated in the prior Office action, Applicants' argument that the newly renumbered claims 75-78 were never entered (Remarks, page 7, first paragraph) notwithstanding.

Additionally, the Examiner notes that amended claims 53-55 (incorrectly numbered as claims 12-14 in Second Preliminary Amendment) were also properly entered and renumbered as claims 75-77 in Paper No. 7, Applicants' argument to the contrary notwithstanding.

While the Examiner had agreed to a new non-final action based on Judy Wigmore's contention that four of the claims were not entered, the Examiner now finds such allegation incorrect as set forth above. As such the reason for requesting another non-final Office action is moot. Nevertheless, for the purpose of clarifying the claims, the rejection over prior art is repeated based on newly amended numbering.

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2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Objections

3. Claim 1-90 are objected to because of the following informalities:

Claims 1-11 should be noted as (Previously Amended).

Claims 66-70 should be noted as (Original), and it is noted that amendment of these claims in the Second Preliminary Amendment has made no changes to these claims.

Claims 76-78 are dependent upon a cancelled claim 71. For the purpose of this Office action, it is presumed to be dependent upon newly renumbered claim 75.

Claims 80-90 are each dependent upon claim which is not commensurate to the Third Preliminary Amendment dated 5/28/2002. For the purpose of this Office action, the numbering of the dependent upon claim is each increased by an increment of 4, e.g., dependent upon claim 75 is changed to claim 79.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. Claims 1-11, 53-55, 66-70 and 75-90 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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In claim 1, lines 2-3 and throughout, the phrases "relative stability" and "absolute stability" are vague and indefinite, i.e., it is not clear as to the scope of these limitations.

In claim 4, line 2, the term "disordered" is vague and indefinite, i.e., it is not clear as to the scope of this limitation. The Examiner suggests that the disordered porosity limitation in claim 53 should be incorporated in the first claim which recites "disordered" limitation, i.e., claim 4.

In claims 53-55 and throughout, the term "stable" is vague and indefinite, i.e., it is not clear what is the scope of this limitation.

Claim Rejections - 35 USC § 102

5. Claims 1, 2, 55 and 66 are rejected under 35 U.S.C. 102(e) as being anticipated by Brinker et al. (US 5858457).

Brinker's invention is directed to a family of supported silica films with pore size in the approximate range 0.8-20 nm exhibiting highly ordered microstructures and porosity derived from an ordered micellar or liquid-crystalline organic-inorganic precursor structure that forms during film deposition. Optically transparent, 100-500-nm (i.e., 0.1-0.5 μ m) thick films exhibiting a unique range of microstructures and uni-modal pore sizes are formed in seconds in a continuous coating operation (Abstract). In Example 5, the film dielectric constant is determined to be 2.37 (column 9, line 29). Although Brinker is silent about the relative stability and absolute stability of dielectric constant in a humid atmosphere, it is believed that the aforementioned dielectric properties are inherent to Brinker's mesoporous silica films, since the silica films are essentially made

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by the same surfactant templated process as the instant claimed invention (column 5, lines 50-54).

Claims lack novelty.

Claim Rejections - 35 USC § 103

6. Claims 1-11, 53-55, 67-70, 79-90 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brinker et al. (US 5858457).

The teachings of Brinker are again relied upon as set forth above.

For claims 1, 2, 55 and 66, if, for the purpose of anticipation, the reference is believed to teach such a number of different embodiments that the specific parameters of each of the claims cannot be considered to be in possession of the skilled artisan, the Examiner believes that, alternatively, each of the claimed embodiments is at most a minor modification to one of ordinary skill.

For claims 3, 5-8 and 67, although Brinker is silent about the standard deviation of the silica film, the Examiner notes that Brinker does teach that spin-coating or other standard techniques may also be used (column 10, lines 19-21), and it is old and well known that spin-coating generally produces thin coating with extremely high thickness uniformity. As such, it would have been obvious to one of ordinary skill in the art to use spin-coating method to make Brinker's silica film with small standard deviation in thickness, motivated by the desire to improve the property (e.g., dielectric constant) uniformity of the film.

For claims 4, 9-11, 53-54 and 68-70, Brinker shows in Fig. 8 the XRD of the film samples before and after calcination at 400°C, and teaches that the film order as judged by the intensity and FWHM of the $2\theta=2.4^\circ$ peak depends strongly on the pre-conditioning RH, with the greatest order achieved at 60% RH. As such, it is known that the order of the porosity can be modified over a wide range by modifying the RH during calcinations, as taught by Brinker, including the range of the disordered porosity of the instant claimed invention.

With respect to the product-by-process claims 75-90, because the method limitations have not been shown on the record to produce a patentably distinct article, as such the formed articles are rendered *prima facie* obvious. It should be pointed out that product-by-process claims are product claims and that to be limiting in a product claim, a process limitation must be evidenced as effecting the structure or chemistry of the resultant product over the prior art. Further, the burden of proof for this showing is on Applicant after the Examiner presents an otherwise *prima facie* rejection. Note MPEP 2113 for a more detailed description.

7. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Victor S Chang whose telephone number is 703-605-4296. The examiner can normally be reached on 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel H Morris can be reached on 703-308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

VSC
August 28, 2003

DANIEL ZIRKER
PRIMARY EXAMINER
GROUP 1300

1700

Daniel Zinker